IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-9 Canceled

10. (Currently Amended) A brake system of the 'brake-by-wire' type for actuating a motor vehicle brake system comprising:

a brake booster operable in response to an input of a driver by a brake pedal and by an electronic regulating and control unit;

a device provided to decouple a force-transmitting connection between the brake pedal and the brake booster in a 'brake-by-wire' operating mode;

a master brake cylinder connected downstream of the brake booster in terms of effect, to one or more pressure chambers of which wheel brakes of the motor vehicle are connected;

a pedal travel simulator which interacts with the brake pedal in order for a resetting force acting on the brake pedal can be simulated in the 'brake-by-wire' operating mode independently of an actuation of the brake booster, and which can be enabled in the 'brake-by-wire' operating mode when the force-transmitting connection between the brake pedal and the brake booster is decoupled and can be disabled outside the 'brake-by-wire' operating mode;

a first sensor (6) ~~for~~ sensing a brake pedal actuating travel (S_{Bp});

a second sensor (18) for sensing a travel (S_{Ds}) of an output member (20) of the brake booster;

a third sensor for sensing a brake pressure prevailing in the system, wherein output signals of the sensors are sent to the electronic regulating and control unit (7);

a control circuit for controlling the travel (S_{Ds}) covered by the output member (20) of the brake booster (3), a nominal value ($S_{Dsnominal}$) of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3) being calculated corresponding to the actuating travel (S_{Bp}) of the brake pedal (1); ~~and~~

a monitoring module (24) which, in the case of a fault such as inclusion of air or brake circuit failure, performs a partial compensation of the extension of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3), which extension is caused by the fault; and

wherein a pressure fluid volume/pressure characteristic curve is stored in the monitoring module (24), so that the dependency of the pressure fluid volume absorption (Q) of the brakes or of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3) and corresponding to the pressure fluid volume absorption (Q) on the hydraulic pressure (p) Q or S_{Ds} = f(p), and in that the monitoring module (24) is furnished with the actual values ($S_{Dsactual}$, p_{actual}) of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3) and of the hydraulic pressure (p) prevailing in the system, and a travel value (S_{model}) corresponding to the nominal value ($Q_{nominal}$) of the pressure fluid volume is calculated from the actual pressure value (p_{actual}) and compared with the actual value ($S_{Dsactual}$) of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3), and a correction value (S_{corr}) is produced in the monitoring module (24) from which a fault in the system is inferred, when the comparison result ($\Delta S_{diff} = S_{model} - S_{Dsactual}$) exceeds a threshold value ($S_{threshold}$).

11. (Cancelled)

12. (Previously presented) A brake system according to claim 10, wherein the partial compensation of the extension of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3), which extension is caused by the fault, is performed by adding a correction value (S_{corr}) to the nominal value ($S_{Dsnominal}$).

13. (Currently Amended) A brake system according to claim 12, wherein the correction value (S_{corr}) corresponds to half of a difference between the nominal value ($S_{Dsnominal}$) and the actual value ($S_{Dsactual}$) of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3).

14. (Previously presented) A brake system according to claim 10, wherein the actual values ($S_{Dsactual}$, p_{actual}) undergo a low-pass filtering operation.

15. (Previously presented) A brake system according to claim 10, wherein a transition function is activated when a case of fault is detected.

16. (Previously presented) A brake system according to claim 10, wherein a warning lamp (31) is activated when a case of fault is detected in the system.

17. (Currently Amended) A brake system of the 'brake-by-wire' type for actuating a motor vehicle brake system comprising:

a brake booster operable in response to an input of a driver by a brake pedal and by an electronic regulating and control unit;

a device provided to decouple a force-transmitting connection between the brake pedal and the brake booster in a 'brake-by-wire' operating mode;

a master brake cylinder connected downstream of the brake booster in terms of effect, to one or more pressure chambers that wheel brakes of the motor vehicle are connected;

a pedal travel simulator which interacts with the brake pedal and due to which a resetting force acting on the brake pedal can be simulated in the 'brake-by-wire' operating mode independently of an actuation of the brake booster, and which can be enabled in the 'brake-by-wire' operating mode when the force-transmitting connection between the brake pedal and the brake booster is decoupled and can be disabled outside the 'brake-by-wire' operating mode;

a first sensor sensing a brake pedal actuating travel (S_{Bp});

a second sensor (18) for sensing a travel (S_{Ds}) of an output member of the brake booster;

third sensor for sensing the brake pressure prevailing in the system, wherein output signals of the sensors are sent to the electronic regulating and control unit (7); and

a control circuit for controlling the travel (S_{Ds}) covered by the output member (20) of the brake booster (3) and the hydraulic pressure (p) prevailing in the system, nominal values ($S_{Dsnominal}$, $p_{nominal}$) thereof being calculated corresponding to the actuating travel (S_{Bp}) of the brake pedal (1), and a monitoring module (24) being provided which, in the case of a fault such as the inclusion of air or brake circuit failure, switches the control circuit from

the travel control mode to the pressure control mode in order to perform a compensation of the extension of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3), which extension is caused by the fault; and

wherein a transition function is activated when a case of fault is detected.

18. (Previously presented) A brake system according to claim 17, wherein a pressure fluid volume/pressure characteristic curve is stored in the monitoring module (24), so that the dependency of the pressure fluid volume absorption (Q) of the brakes or of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3) and corresponding to the pressure fluid volume absorption (Q) on the hydraulic pressure (p) Q or $S_{Ds} = f(p)$, and in that the monitoring module (24) is furnished with the actual values ($S_{Dsactual}$, p_{actual}) of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3) and of the hydraulic pressure (p) prevailing in the system, and a travel value (S_{model}) corresponding to the nominal value ($Q_{nominal}$) of the pressure fluid volume is calculated from the actual pressure value (p_{actual}) and compared with the actual value ($S_{Dsactual}$) of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3), and a correction value (S_{corr}) is produced in the monitoring module (24) from which a fault in the system is inferred, when the comparison result ($\Delta S_{diff} = S_{model} - S_{Dsactual}$) exceeds a threshold value ($S_{threshold}$).

19. (Previously presented) A brake system according to claim 18, wherein the partial compensation of the extension of the travel (S_{Ds}) covered by the output member (20) of the brake booster (3), which extension is caused by the fault, is performed by adding a correction value (S_{corr}) to the nominal value ($S_{Dsnominal}$).

20. (Previously presented) A brake system according to claim 19, wherein the correction value (S_{corr}) corresponds to half the result of the comparison ($\Delta S/2$).

21. (Previously presented) A brake system according to claim 17, wherein the switch-over of the control circuit from the travel control mode to the pressure control mode is performed by the correction value (S_{corr}).

22. (Previously presented) A brake system according to claim 17, wherein the actual values ($S_{Dsactual}$, p_{actual}) undergo a low-pass filtering operation.

23. (Cancelled)

24. (Previously presented) A brake system according to claim 17, wherein a warning lamp (31) is activated when a case of fault is detected in the system.

25. (Previously presented) A brake system according to claim 15, wherein the transition function is one of a low-pass filter and a ramp function.

26. (Previously presented) A brake system according to claim 23, wherein the transition function is one of a low-pass filter and a ramp function.